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# Career Class (Im)mobility of the Social-Cultural Specialists and the Technocrats in the Netherlands

Ayse Güveli and Nan Dirk De Graaf

Scholars have long argued that there are two occupational fractions within the middle class forming two separate classes. They are commonly referred to as the technocrats and the social-cultural specialists. In this article, we distinguish two 'new' classes of the high- and low-grade social-cultural specialists and two 'old' classes of the high- and low-grade technocrats within the middle class. The classes of the social-cultural specialists are expected to be as closed as the other social classes. If the classes of the social-cultural specialists indeed form 'new' classes, they should become more closed over time. Therefore, we investigate whether the social-cultural specialists and the technocrats have different patterns of intragenerational class (im)mobility compared to other classes and whether these patterns change over time. We use Dutch mobility data from 16 representative surveys ( $n = 12,548$ ). The results strongly support the 'new' class division and show that the class of the high-grade social-cultural specialists are more closed than all other social classes. The class of the lower-grade social-cultural specialists is also rather closed and indeed becomes more closed over time.

## Introduction

Since the 1970s, several scholars have claimed that the middle class is no longer a single class, but forms two social classes. These two classes are conceived in different ways but in all cases implying a cleavage within the middle class, whether between the 'old' versus the 'new' classes (Bruce-Biggs, 1979; Brint, 1984), cultural elite versus economic elite (Bourdieu, 1984), knowledge experts versus managers (Wright, 1985, 1997), or technocrats/controllers versus social-cultural specialists (De Graaf and Steijn, 1997; Kriesi, 1989; Van de Werfhorst and De Graaf, 2004). Inspired by new class theories, Güveli *et al.* (2005, 2007) have harmonized all of these conceptualizations. They distinguished two 'new' classes of high- and low-grade social-cultural

specialists and two 'old' classes of high- and low-grade technocrats within the middle class. They claim that social-cultural specialists are engendered by post-industrial employment structures while technocrats originate from industrial employment structures (De Graaf and Steijn, 1997; Kriesi, 1989; Ganzeboom *et al.*, 1987; De Graaf and Kalmijn, 1995). Several scholars emphasized that the class distinctions can best be conceptualized by their different positions on outcome dimensions, such as political or moral orientations and consumption styles. In a similar vein, Güveli *et al.* (2007) showed that the middle class fractions differ in their political orientation, with social-cultural specialists becoming more leftist since the 1970s in the Netherlands. This study examines the degree to which the middle class fractions display

stable patterns of intragenerational (im)mobility (Goldthorpe, 2000; Mayer and Carroll, 1987).

Patterns of intragenerational and intergenerational class (im)mobility and collective behaviour of social class members are classically used to outline social class boundaries (Goldthorpe, 1980; Erikson and Goldthorpe, 1992; Mayer and Carroll, 1987; Lipset, 1960, 1981; Nieuwebeerta, 1995; Manza and Brooks, 1996). According to Weber (1978, 1922: 302), “a ‘social class’ makes up the totality of those class situations within which individual and generational mobility is easy and typical”. With individual mobility, Weber implies intragenerational or career class mobility. Career class immobility is an indicator for social cleavages within societies (Mayer and Carroll, 1987). If, for example, new social classes arise, these classes should have manifest class boundaries before they can be labelled as a class. A class boundary ensures intra-class loyalty, and, to a certain extent, this intra-class loyalty determines the collective social action of its members.

This study focuses on the patterns of intragenerational class mobility of the high- and low-grade social-cultural specialists and the high- and low-grade technocrats. The idea behind any class distinction is that there is little interclass fluctuation within a generation (Mayer and Carroll, 1987). The outflow and inflow figures of an assumed social class should to some extent be similar as the other more traditional social classes to justify their distinction. If the newly distinguished social classes are as closed as the other social classes, the concept validity of these social classes is, to a certain extent, justified regarding their intragenerational class (im)mobility. To what extent do the middle class fractions form stable intragenerational class units? Our first research question is: *To what extent are the newly distinguished social classes as closed as the other more traditional social classes?*

An arising class needs time to become a distinct class and to gain a high degree of demographic identity (Goldthorpe, 2000). The question is whether the ‘new’ classes of the high- and low-grade social-cultural specialists have become more stable units over time. Thus, the second research question is: *To what extent do the ‘new’ social classes, i.e. the high-grade and low-grade social-cultural specialists, become more closed over time?* If the ‘new’ social classes become more fixed over time and the ‘old’ classes do not, this would be an important indicator that the ‘new’ social classes become classes of their own.

Even though the service class of all post-industrial societies has been growing since 1960s, the Netherlands

is one of these societies that has experienced a very fast growth and has by now the largest service class (Ganzeboom and Luijkx, 2004; Breen, 2004). According to figures provided by Ganzeboom and Luijkx (2004), the majority of the Dutch employed male population (50 per cent) works in the service class in 1999. Therefore, the Netherlands is an interesting society to study the partition of the service class. Consequently, to answer our questions, we use Dutch mobility data. More specifically, we will use mobility data from 16 different surveys collected between 1982 and 2004. In the next section, we explain the conceptualization of the fractions in the middle class. In this section, we also set forth the theories of social mobility specifically in relation to the assumed class distinction and their class formation process over time. Then, we discuss the data and the methods used in the analysis. We present the findings and discuss the conclusions in the last section.

## Theory

### Fractions Within the Middle Class

New class theorists have argued that there are new social classes within the middle class and that these classes should be separated into single classes. Unfortunately, there is no consensus on the conceptualization of these fractions. Brint (1984), for example, compared several conceptualizations to explain the liberal attitudes of middle class members and concluded that educational differences explain most of the variations between the ‘new’ and ‘old’ classes. Lamont (1987), by contrast, considered cultural capital workers as a new class claiming that their common class interests explain their progressive attitudes. These common interests are to maintain and increase their autonomy, have a powerful government sector, raise taxes from the private sector and support politics regarding ‘non-material issues’ like post-materialism, environmentalism, and the new left.

Esping-Andersen (1993) claimed that industrial labour markets are transforming into post-industrial labour markets and new class schemata should replace the class schemata that are based on the industrial division of labour. According to him, a differentiation should be made between industrial versus the post-industrial division of labour. Managers within the middle class reflect an industrial logic in the division of labour whereas professionals within the middle class reveal the post-industrial logic (Esping-Andersen, 1993: 13). Subsequently, he distinguished four post-industrial classes: (i) professionals

and scientists, (ii) technicians and semi-professionals, (iii) skilled service workers, and (iv) unskilled service workers in his class schema.

Bourdieu (1984) made a distinction between *economic* and *cultural* status hierarchies. He used occupational position to differentiate between a person's economic and cultural status. He used two different occupational ladders for these two dimensions. Occupations with a low social status, like unskilled workers, scored low on both ladders, specific high social status occupations scored high on the cultural ladder, and other high social status occupations scored high on the economic ladder. Occupations in education, health care and social services, for example, are expected to score high on cultural capital (Bourdieu, 1984) and constitute the 'new class' of the post-industrial society (De Swaan, 1985). Occupations assumed to have a relatively high economic dimension are those of the 'old' middle class, like economists, engineers, managers, and proprietors.

Kriesi (1989) also built on the 'new' class concept, which he used to explain support for new social movements in the Netherlands. He distinguished two main classes, technocrats and social-cultural specialists, claiming to have 'a basic antagonism of interest' (Kriesi, 1989: 1081). Technocrats are supposed to preserve the integrity of the organization they work for, while social-cultural specialists are more client-oriented or their objective is to act within the body of knowledge of the discipline they belong. The specialists are supposed to represent the 'new' class, and they are likely to support the new social movements because 'the specialists try to defend their own and their clients' relative autonomy' against the interventions of the technocratic controllers (Kriesi, 1989: 1085–86).

### 'New' Social Classes in the Middle Class: Social Cultural Specialists Versus Technocrats

Several scholars attempted to integrate these theories into new class schemata. Inspired by new class theories, changes in the employment structure, and especially, the work of Kriesi (1989), De Graaf and Steijn (1997) distinguished the social-cultural specialists from the controllers within the middle class of the EGP class schema, initially constructed by Erikson *et al.* (1979). They showed that this distinction improves the explanation of an array of attitudes and behaviours substantially, even when controlling for education. Furthermore, Van de Werfhorst and De Graaf (2004)

showed that even the field of education of these class members does not explain the differences in political orientation of controllers and social-cultural specialists. Güveli *et al.* (2005, 2007) improved the classification of De Graaf and Steijn (1997) by implementing experts on labour and job markets. In this article, we use this improved version of the classification of the middle class, and provide an additional validity test for this classification.

Inspired by new class theories, Güveli *et al.* (2005, 2007) distinguished two occupational segments within the middle class in order to account for the assumed class cleavages. *Technocrats* and *social-cultural specialists* were distinguished within the middle class according to a combination of two criteria. The first criterion is *difficulty in monitoring the tasks performed by employees*. They claimed that tasks performed by social-cultural specialists are more difficult to monitor than tasks performed by managers, administrators, and technicians. The second criterion is the *social and cultural feature of occupations*. This second criterion has two components: a component of *social services* and a component of *social-cultural knowledge*. Occupations do not need to have both components to be classified as social-cultural specialists: one is enough.

Güveli *et al.* (2005, 2007) claimed that social-cultural specialists are relatively difficult to control due to their assets versus technocrats (Kriesi, 1989; Friedson, 1986; Wanrooy, 2001). As Flood and Scott (1978: 242) put it, 'it is widely recognized that the assessment of professional performance is at best a complex and hazardous business.' Freidson (1986: 152) argued that there is a 'basic antagonism of interest' between managers and professionals. Managers seek to prevent the interest and the viability of the organization they work for while specialists try to prevent the interest of their clients, patients or students and/or their field of specialization. Generally, it is important for specialists to guarantee autonomy in their work. Therefore, they do not want their managers to interfere in their domain of specialization. Flood and Scott (1978) show that the influence of the managers on the decisions of surgeons' own domain was not significantly related to the quality of surgical care. On the other hand, a greater regulation of the work of individual surgeons by the surgical staff was associated with higher quality of surgical care in the hospitals. Moreover, managers or employers do not have the specialized knowledge that social-cultural specialists possess at their disposal. These managers have a classic Principal-Agent-problem (Coleman, 1990). The principal (i.e. manager) is responsible for the agents, but these agents have skills and knowledge the

principal does not have. This makes it difficult for the principal to control the agent. Managers, administrators, and technicians are relatively more concerned with the conservation of the viability of the organizational unit they work for (Güveli *et al.*, 2005, 2007).

The social services provide the 'quality of life' in societies such as in health, education, and services in the public sector. Güveli *et al.* (2005, 2007) based the social and cultural feature of occupations within the middle class on Bell's (1971) thesis of the services within post-industrial societies. According to Bell (1971), the work tasks of the social-cultural specialists are difficult to perform because professionals carrying out these tasks face, on the one hand, increasing demand for quality of service as a result of growing wealth in post-industrial societies. On the other hand, these occupations are not directly instrumental to profit maximization. Innovations such as mechanization and computerization can hardly make these occupations more efficient (Baumol, 1967).

## Theories on Class Boundaries and Hypotheses

Theories about the importance of social mobility for the class formation process are more concentrated on intergenerational social mobility than on intragenerational class mobility (Mayer and Carroll, 1987). However, we argue that intragenerational class (im)mobility is at least as important as intergenerational class mobility. Comparing people who are mobile with those who are immobile could extend our understanding of the relation between social class and life chances and lifestyles. We specifically concentrate on theories about social (im)mobility within one generation, but we also use theories about intergenerational (im)mobility in general. Marxist theory, for example, claims that high rates of both inter- and intragenerational social mobility contribute to the transformation of the class structure and in some cases, it causes the decomposition of social classes (Marx, 1926). An opposite idea is that high rates of social mobility do not necessarily undermine the existence of social classes (Wright, 1979). The existence of social classes is independent of social mobility; a class is analogous to a hotel, 'always full, but always of different people' (Schumpeter, 1953: 129; Dahrendorf, 1969: 108). The latter argument is hard to defend because when classes are very fluid, people will anticipate later destination classes and they will not behave in accordance with their current class position (De Graaf *et al.*, 1995). For example, if there is a high degree of interclass mobility within a generation,

the relation between class position and vote will never be strong.

Weber (1922) asserted that mobility could serve as a criterion for determining class boundaries. On the other hand, Goldthorpe (2000); Erikson and Goldthorpe (1992) claimed that a class structure is constituted by employment relations and not by social mobility. In his 1980 book, Goldthorpe did not use mobility to classify social class, but he asserted that a low level of social mobility is crucial for class stability. According to him, social immobility is, to a certain extent, a precondition for class coherence. If a class recruits from its own origin, it will improve intra-class solidarity and will organize the class interest of the incumbents. In case of a high level of interclass fluctuation, it becomes more difficult for stable persons to form a common class interest. For example, Ultee and De Graaf (1991; De Graaf and Ultee, 1987) claimed that if inflow to upper classes increases substantially, it will be difficult for these classes to uphold their norms with regard to highbrow culture. Thus, we argue that a necessary condition for a social class is that it needs to have a certain level of class boundary.

Even though sociological theories about class mobility do not make a clear statement regarding the influence of intragenerational class mobility on the existence and formation of social classes, it is straightforward that frequent interclass fluctuations within a generation undermines class stability. A class distinction requires a certain degree of stability within a generation. According to Mayer and Carroll (1987: 15), if intragenerational inflow and outflow mobility figures are high, 'then the salience of an assumed class distinction might well be questioned'.

The class structure conditions relative mobility rates via the employment relations they comprise (Goldthorpe, 2000). Employment relations are delineated in terms of occupations. To enter a social class, one needs to have the skills and capital needed for those occupations the social class in question covers. The high- and low-grade social-cultural specialists are distinguished on the basis of employment relations being difficult to monitor as well as performance of their work tasks with social and cultural knowledge and skills. Social-cultural specialists have more social and cultural skills than other employed people whereas technocrats possess more economic capital and skills. The classes of the high- and low-grade technocrats are expected to recruit more from other social classes than the classes of the high- and low-grade social-cultural specialists. The reason for this is that the skills and the human capital technocrats need to perform their job

well can be obtained, relatively more, through on-the-job training than social-cultural specialists (Savage *et al.*, 1992: 132–58). For example, in the beginning of their work career, people can enter a lower social class and thereafter can climb easier to the classes of high- and low-grade technocrats while it is more difficult for these people to enter the classes of high- and low-grade social-cultural specialists. Social-cultural specialists, on the other hand, obtain their class specific—social and cultural—skills early in their formative years from their parents and education. Subsequently, children with social and cultural skills are positively sanctioned by their teachers who possess the same kinds of skills (Bourdieu, 1984). They are consequently more likely to enter the class of the social-cultural specialists afterwards.

Social-cultural specialists are selected more on the basis of their educational credentials to their jobs than technocrats. In this respect, to become a member of the class of social-cultural specialists, one has to possess specialized knowledge on social and cultural issues. In other words, there is a checkpoint for entering the class of social-cultural specialists; this is to a lesser extent the case in other social classes. For example, a medical doctor, a teacher and a pastor, who belong to the class of social-cultural specialists, are only able to enter these occupations if they are educated in these professions while a manager and computer specialists can enter their occupation without a specifically required field of education. Members of the latter occupations specialize in their profession more by on-the-job training than the former ones. However, in the last decades, the other social classes also increasingly require educational credentials.

Career class mobility is substantially different from intergenerational class mobility. That is to say, once a member of a class, it is more difficult for a person to move to another class in their lifetime than it is to move to a class other than his/her father's class. The difficulty in moving to another class during one's lifetime stems from the difficulty in gaining the qualifications needed to reach a specific social class after the formative years of education. Particularly, we expect that the inflow to and outflow from the class of social-cultural specialists is more restricted than, for example, the class of technocrats because of the specific kind of qualifications the former class requires from their members. Overall, our first expectation is that *the classes of the high- and low-grade social-cultural specialists are more closed than the other traditional social classes.*

The post-industrial employment relations engender its social class structure. The rise of social classes is a gradual process. The 'new' social classes need time to organize their class interest and to form a specific class identity. According to Goldthorpe (1980), the class formation process is primarily about the creation of 'stable class collectivities'. However, there are two effects operating in this process. On the one hand, there is a class formation process of the 'new' social classes, which we expect its effect tightens the boundaries of the 'new' social classes, while, on the other hand, there is a process of 'professionalization, bureaucratization and technical complexity in work' affecting the (im)mobility of the 'new' social class members. According to the 'counterbalance' thesis (Goldthorpe, 1980), work-life career is becoming increasingly difficult due to professionalization. While the last process increases intergenerational mobility, it decreases intragenerational mobility because access to the middle and higher levels of the occupational ladder is made increasingly dependent upon formal education. Therefore, our second expectation is that *the classes of the high- and low-grade social-cultural specialists become more closed over time than other traditional social classes.*

## Data

The data, we use in this article allow us to test our expectations about intragenerational (im)mobility, i.e. career class (im)mobility. Intragenerational mobility is usually studied by analysing the mobility between the first and last occupation (Blau and Duncan, 1967; Goldthorpe, 1977, 1980; Erikson and Goldthorpe, 1992; De Graaf and Luijkx, 1995; Blossfeld, 1986). This is not a preferable method of dealing with career class mobility since young persons do not have enough time to change their classes. According to the life-course thesis, career class mobility is much more likely in the early working life (Mayer and Carroll, 1987: 19). Therefore, we apply a selection on age. We select people who are older than 39 years. The data used in this study enable us to make this selection. Our dataset contains information about the first occupation respondents had after finishing their education and the last or current occupation. We analyse (im)mobility between the class of first occupation and the last or current class of occupation over time.

We use data from 16 Dutch surveys that have been collected between 1982 and 2003, which are a part of the international stratification and mobility file



**Figure 1** Variable codes, codes of the EGP class schema with two more newly distinguished classes (Ib and IIb), class name and the occupations in the class of first occupation and the class of last/current occupation.

Variable code	EGP code	Class name	Occupations
1	Ia	High-grade technocrats	Managers of big firms, governmental and non-governmental administrators, physical scientists, etc.
2	Ib	High-grade social-cultural specialists	Medical doctors, dentists, university teachers, social scientists high church officers, etc.
3	IIa	Low-grade technocrats	Managers of small firms, engineers, computer programmers, etc.
4	IIb	Low-grade social-cultural specialists	Medical assistants, professional nurses, teachers, artists, etc.
5	III	Routine non-manual employees	Routine non-manual employees in administration and commerce, rank and file service workers.
6	IV	Self-employed persons	Small proprietors with and without employees, farmers.
7	V/VI	Skilled manual workers	Lower-grade technicians, supervisors of manual workers, skilled manuals.
8	VII	Semi-unskilled manual workers	Semi- and unskilled manual workers, agricultural and other workers in primary production.

(ISMF) project. The total number of respondents is 26,058. An overview of the data sources is given in Appendix 1. Only people older than 39 years of age who have a job or have had a job when they were 40 years of age or older are included in the analysis. Including only people older than 39 years in the analysis gives people enough time to switch from their first class of occupation. After excluding the respondents younger than 40 years, the total amount of respondents included in the analysis is 10,448: 5,787 men and 4,661 women born between 1887 and 1963.

## Operationalization

The operationalization of the fractions within the middle class is fitted into the EGP class schema (classes I and II) since this schema became a standard indicator of class position in the international mobility research (Erikson *et al.*, 1979; Ganzeboom *et al.*, 1989; Erikson and Goldthorpe, 1992; Breen, 2004). Occupations of the middle class fractions were identified based on the four-digit occupational classification of the International Standard Classification of Occupations 1968 (ISCO). Güveli *et al.* (2005, 2007) distinguished social-cultural specialists from technocrats within the middle class on the basis of a combination of two criteria outlined in the previous section. They used 12 experts who are specialists on job or labour markets to allocate the occupations of the middle class into the classes of technocrats and social-cultural

specialists *according to their criteria*. The reliability coefficient (alpha coefficient for dichotomous data, this is equivalent to the Kuder-Richardson 20) of the experts' allocation is 0.95; no expert disagreed strongly with the other and overall reliability could not be improved by leaving out experts (see for more detail Güveli *et al.*, 2005, 2007). The coding scheme is presented in Appendix 2 or it can be downloaded from the website <<http://www.ayseguveli.nl>>.

To examine the intragenerational class immobility of the newly distinguished social classes, the inflow and outflow figures of these classes are compared with the inflow and outflow figures of other more traditional social classes. To do so, two variables are constructed—a variable for the class of first occupation and a variable for the class of last or current occupation. Both variables contain two new and six other more traditional social classes of the EGP class schema. The categories of the variables of the class of first occupation (the origin class) and the class of last or current occupation (the destination class) are presented in Figure 1. They are as follows: (1) high-grade technocrats (Ia); (2) high-grade social-cultural specialists (Ib); (3) low-grade technocrats (IIa); (4) low-grade social-cultural specialists (IIb); (5) routine non-manual workers (III); (6) self-employed workers (IV); (7) skilled manual workers (V/VI), and (8) semi and unskilled manual workers (VII). The classes III, IV, V/VI, and VII are identified by using the conversion tools

**Table 1** Percentage incumbents in the last/current class of occupations over four birth cohorts for men and women older than 39 year ( $N_{\text{men}}=5,787$  and  $N_{\text{women}}=4,661$ )

Social Classes	Birth Cohorts			
	1887–1929	1930–1939	1940–1949	1950–1963
Men				
High-grade technocrats	15.4	16.4	14.8	15.7
High-grade social-cultural specialists	3.9	2.9	4.1	4.5
Low-grade technocrats	12.2	14.9	17.5	18.5
Low-grade social-cultural specialists	5.1	7.8	11.7	15.1
Routine non-manual employees	17.1	13.1	13.5	13.2
Self-employed persons	10.6	7.6	6.5	3.8
Skilled manual workers	18.0	20.3	18.6	15.7
Unskilled manual workers	17.7	17.0	13.6	13.5
Total N	997	1,504	1,999	1,679
Women				
High-grade technocrats	2.1	2.0	3.5	3.7
High-grade social-cultural specialists	2.0	1.0	1.4	2.8
Low-grade technocrats	3.8	4.6	7.2	6.4
Low-grade social-cultural specialists	12.1	14.9	19.0	24.6
Routine non-manual employees	31.5	37.7	38.0	40.5
Self-employed persons	6.4	4.9	4.5	2.2
Skilled manual workers	6.0	4.4	3.3	2.5
Unskilled manual workers	36.1	30.5	23.1	17.4
Total N	654	1,143	1,745	1,480

from ISCO 68 to EGP class schema, which was developed by Ganzeboom *et al.* (1989).

The (im)mobility between the first class and the last or current class is controlled for level of education because the education a person has affects one's work-life mobility (Pollaert *et al.* 1997). For doing so, level of education is categorized into three categories in terms of years of education people have had. Using the years of education to categorize the level of education could to some extent account for the comparability of education over time. People who have had at most 10 years of education are coded as having a low education (1). People who have had 11–14 years of education are coded as having a middle education (2) and people who have had 15–21 years of education are coded as having a high education (3). To test the over time (im)mobility of the 'new' social classes, a variable cohort is constructed. Respondents born between 1887 and 1929 form the first (1) cohort. Respondents born between 1930 and 1939 constitute the second (2) cohort. Respondents born between 1940 and 1949 form the third (3) cohort and respondents born between 1950 and 1963 constitute the fourth (4) cohort.

Table 1 shows the percentage incumbents in the last/current class of occupations over four birth cohorts for men and women. A first impression

received from this table is that the share of incumbents of all fractions within the middle class increased over the four birth cohorts while the share of all other classes decreased for men. The share of women in these classes over the four birth cohorts shows similar processes. Only the share of the routine non-manual female employees increased over these cohorts; whereas, it decreased for men. The proportion of men in the class of the high-grade technocrats increased slightly from 15 per cent in the first birth cohort of 1887–1929 to 16 per cent in the last birth cohort of 1950–1963. The share of men in the class of the high-grade social-cultural specialists also increased slightly from 4 per cent in the first cohort to five per cent in the last cohort. The share of men in the class of the low-grade technocrats increased from 12 to 19 per cent between the first and last birth cohorts. The share of men in the class of the low-grade social-cultural specialists tripled between the first cohort and last cohort from five to 15 per cent. This table shows that for men, the share of the upper middle class is higher in the first cohort (15.4 + 3.9 per cent = 19.3 per cent) than the share of the lower middle class (12.2 + 5.1 per cent = 17.3 per cent), while in the last cohort, the share of the lower middle class exceeded the share of the upper middle class. That is, the share of the lower middle class became much higher (18.5 + 15.1



per cent = 33.6) than that of the upper middle class (15.7 + 4.5 per cent = 20.2 per cent).

The proportion of women in both the classes of the high-grade technocrats and the high-grade social-cultural specialists increased slightly between the first and last birth cohorts from 2 to four per cent and from two to three per cent, respectively. The share of women in the low-grade technocrats increased from 4 to 6 per cent between the first and last birth cohorts. Table 1 shows that the proportion of women in the class of the low-grade social-cultural specialists more than doubled from 12 per cent in the first cohort to 25 per cent in the last cohort. These figures also show that in the middle class women are overrepresented among low-grade social-cultural specialists. However, among the total female employed population, women are overrepresented in the routine non-manual employees' class in the last cohort. In the first birth cohort, they were over represented in the class of unskilled manual workers. Remarkable is the decline in the share of female unskilled manual workers from 36 per cent in the first birth cohort to 17 per cent in the last birth cohort. In the next section, we elaborate on the structural mobility between the first class of occupation and the last/current class of occupation and on the patterns of relative (im)mobility.

## Method

We start our analysis by showing some descriptive figures about intragenerational class (im)mobility. The inflow figures of social classes are shown in terms of absolute mobility figures. The absolute mobility figures are gross figures, e.g. without controlling for the structural changes in the employment structure. Even though absolute mobility rates give some information about class stability, the relative rates or the odd ratios are more important for delineating class boundaries. To be able to reveal class openness (or closeness) of the newly distinguished social classes, one should control for structural changes. An example of structural changes is that, in the last decades of the 20th century, the size of the classes of skilled and unskilled manual workers have decreased while the size of the middle class has increased. Log linear modelling is an adequate method to control for these changes. By using log linear modelling, one controls for changes in the marginal distribution of rows and columns over time. Therefore, we use these models to control for structural changes and to reveal the stability of the 'new' social classes. However, we also show the absolute figures of social mobility to give an overview of the effect of structural changes on immobility.

Subsequently, the cohort variable is included in the models to find the class stability over time.

## Results

### Absolute Mobility for Men and Women

The absolute (im)mobility figures for men and women are shown in Tables 2 and 3. In Table 2, the absolute mobility for men between the class of first occupation (origin class) and the class of last/current occupation (destination class) is 46 per cent while 54 per cent are stable<sup>1</sup>. This is in line with former findings (De Graaf and Luijkx, 1995; Pollaerts *et al.* 1997) that most people remain in their first social class. The column marginals of the skilled and unskilled manual workers are lower than their row marginals while the column marginals of all other classes are higher than their row marginals, which is an indication for structural mobility. That is, the number of jobs in the destination class of skilled manual and unskilled manual workers decreased while in all other destination classes, the number of jobs increased. Table 2 shows the inflow percentages from the origin to the destination class for men. The numbers in the main diagonal cells represent stable males. It appears that 37 per cent of males are upwardly mobile and 9 per cent downwardly mobile. Intragenerational immobility is highest in the classes of the high- and low-grade social-cultural specialists and in the skilled and unskilled manual workers (61.9, 53.3, 67.1, and 59.3, respectively), while the classes of the high- and low-grade technocrats (24.3 and 24.8, respectively) show much less intragenerational stability.

Sixty-two per cent of the high-grade social-cultural specialists had had the same first class of occupation while more than half of the low-grade social-cultural specialists in the last class of occupation (53.3 per cent) are intragenerationally stable. The high-grade social-cultural specialists are mostly recruited from the low-grade social-cultural specialists (10.2 per cent) and from the routine non-manual employees (10.8 per cent), while the low-grade social-cultural specialists are recruited more from the routine non-manual employees (15.6 per cent) and the skilled manual workers (13.7 per cent).

The high-grade technocrats recruit mostly from the routine non-manual employees (22 per cent) and from the skilled manual workers (15.4 per cent) and the low-grade-technocrats (15.4 per cent) subsequently. The low-grade technocrats recruit as much from the routine non-manual employees (24.9 per cent) and from the skilled manual workers (22.0 per cent) as

**Table 2** Intragenerational class mobility between the class of first occupation and the last/current class of occupation for men: inflow percentages (N=5,787)

First class	Last/current class								Total
	Ia.	Ib.	Ila.	Ilb.	III.	IV.	V/VI.	VII.	
	High technocrats	High social cultural specialists	Low technocrats	Low social cultural specialists	Routine non manuals	Self employed	Skilled manuals	Unskilled manuals	
Ia. High technocrats	<b>24.3</b>	4.5	6.7	3.6	2.5	1.0	1.6	0.6	6.3
Ib. High social-cultural specialists	3.3	<b>61.9</b>	0.9	1.4	0.2	0.3	0.0	0.1	2.8
Ila. Low technocrats	15.4	2.3	<b>24.8</b>	4.9	5.4	3.8	2.3	1.8	9.0
Ilb. Low social-cultural specialists	9.8	10.2	5.7	<b>53.3</b>	2.2	1.0	0.4	0.3	8.4
III. Routine non-manual employees	22.0	10.8	24.9	15.6	<b>47.6</b>	8.5	3.7	6.8	18.6
IV. Self employed persons	1.6	1.1	2.5	0.9	2.3	<b>40.7</b>	1.8	4.1	4.9
V/VI. Skilled manual workers	15.4	5.1	22.0	13.7	20.9	18.1	<b>67.1</b>	27.0	28.2
VII. Unskilled manual workers	8.3	4.0	12.6	6.5	18.9	26.6	23.1	<b>59.3</b>	21.9
N	(918)	(179)	(1001)	(553)	(815)	(398)	(1052)	(874)	(5787)
Total	15.9	3.1	17.3	9.6	14.1	6.9	18.2	15.1	100.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

**Table 3** Intragenerational class mobility between the class of first occupation and the last/current class of occupation for women: inflow percentages (N=4,661)

First class	Last/current class								Total
	Ia.	Ib.	Ila.	Ilb.	III.	IV.	V/VI.	VII.	
	High technocrats	High social cultural specialists	Low technocrats	Low social cultural specialists	Routine non manuals	Self employed	Skilled manuals	Unskilled manuals	
Ia. High technocrats	<b>25.0</b>	3.1	1.9	0.7	0.3	0.0	0.0	0.3	1.3
Ib. High social-cultural specialists	0.6	<b>46.2</b>	0.3	0.8	0.1	0.0	0.0	0.0	0.9
Ila. Low technocrats	7.7	4.6	<b>37.5</b>	2.8	2.2	1.6	0.6	0.8	4.5
Ilb. Low social-cultural specialists	25.6	18.5	10.8	<b>64.8</b>	4.2	4.2	0.6	2.9	16.2
III. Routine non-manual employees	31.4	24.6	38.4	23.3	<b>76.3</b>	36.1	12.4	19.3	43.8
IV. Self employed persons	0.6	1.5	2.2	0.6	1.1	<b>34.6</b>	3.0	1.2	2.5
V/VI. Skilled manual workers	1.3	1.5	2.5	0.8	2.0	4.7	<b>55.6</b>	3.6	4.2
VII. Unskilled manual workers	7.7	0.0	6.3	6.2	13.9	18.8	27.8	<b>71.9</b>	26.5
N	(156)	(65)	(315)	(854)	(1766)	(191)	(169)	(1145)	(4661)
Total	3.3	1.4	6.8	18.3	37.9	4.1	3.6	24.6	100.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

from their own class of origin (24.8 per cent). Furthermore, more than one out of five members of all social classes, except the high-grade social-cultural specialists, in destination class comes from classes of skilled and unskilled manual workers. The high- and low-grade social-cultural specialists recruit least from the working class (skilled and unskilled manual workers), 9.1 per cent (5.1 + 4 per cent) and 20.2 per cent (13.7 + 6.5 per cent), respectively. These figures support our expectations that the high- and low-grade technocrats are more intragenerationally mobile than the high- and low-grade social-cultural specialists.

Table 3 shows the inflow percentages from the origin to the destination class for women. The absolute work-life mobility between the origin class and the destination class is 34 per cent while the absolute work-life immobility comes to 66 per cent. It is generally known that women, especially, in the past, quit their job early in their work-life career and many only worked part-time, which hinders their career chances (Blossfeld and Drobnic, 2001; Hendrickx, *et al.*, 2001; Blossfeld and Hakim, 1997; Blossfeld, 1986). This may explain the relative high work-life immobility among women. The column and row marginals are substantially different from each other implying structural work-life mobility under female employees. Jobs in the classes of routine non-manual employees, skilled manual, and unskilled manual workers decreased while jobs in all other classes increased.

Table 3 shows that among women, 21 per cent are upwardly mobile while 11 per cent are downwardly mobile. Comparing these figures of women to those of men shows that women are substantially less upwardly mobile (16 per cent) than men. However, there is negligible difference with respect to their downward career class mobility: 2 per cent of women are more downwardly mobile than men. Furthermore, women are over-represented in three social classes: routine non-manual employees, unskilled manual workers, and low-grade social-cultural specialists, respectively.

The high- and low-grade technocrats recruit more from the routine non-manual employees than from their own class of origin, 31.4 per cent and 38.4 per cent, respectively. Mostly, women tend to start their work-life career in routine non-manual jobs and change their class during their work-life career. Pollaerts *et al.* (1997) showed similar results by using only a survey of our data set (the Family Survey of Dutch Population 1992). The classes that recruit relatively less from the routine non-manual employees are the high-, low-grade social-cultural specialists, and the skilled and unskilled manual workers.

Among the fractions of the middle class, women are least employed in the high-grade social-cultural specialist class (1.4 per cent), while they are mostly employed in the low-grade social-cultural specialist class (18.3 per cent). The high- and low-grade social-cultural specialists are intragenerationally more immobile than the high- and low-grade technocrats. This is, on the basis of absolute mobility figures, a support for our expectation. In the next section, we take into account structural mobility and focus on patterns of relative intragenerational (im)mobility.

## Log Linear Models for Men

We do not present log linear models for women, since the mobility patterns of women show unstable patterns<sup>2</sup>. The results of the log linear analysis of the association between the origin class and the destination class for men are presented in Table 4. To indicate the fit of the models, we use the likelihood ratio ( $L^2$ ) and the *Bayesian Information Coefficient* (BIC) (Raftery, 1986). Models 1–7 of Table 4 are based on the assumption that the association between the origin and the destination class does not change over cohorts, i.e. between 1887 and 1963. The class career mobility over cohorts is modelled in Models 8–11. With these models, the hypothesis stating that the ‘new’ social classes become more closed over time can be tested. Columns 2 and 4 of Table 4 show the model fits of log

**Table 4** Loglinear model selection for intragenerational class mobility for men (N = 5,742)

Models	$L^2$	df	BIC
1. $E^*FC + E^*LC + E^*C_o + FC^*C_o + LC^*C_o$	3493.99	672	967.90
2. $1 + D$	1343.25	671	–1179.08
3. $1 + D_i$	1054.93	664	–1441.09
4. $3 + SYM$	469.09	636	–1921.67
5. $3 + U$	596.07	663	–1896.19
6. $3 + RC$	515.41	651	–1931.74
7. $3 + E-RC$	805.40	658	–1668.06
8. $6 + D^*C_oL$	515.22	650	–1928.17
9. $6 + D^*C_o$	509.90	647	–1922.21
10. $6 + D_i^*C_oL$	500.49	643	–1916.59
11. $6 + D_i^*C_o$	481.80	627	–1845.06

*E* = level of education; *FC* = first class of occupation; *LC* = last/current class of occupation; *C<sub>o</sub>* = Cohort; *C<sub>o</sub>L* = cohort linear; *D* = diagonal (class similarity) parameter; *D<sub>i</sub>* = differences among diagonal cells; *SYM* = quasi-symmetry model; *U* = quasi-uniform association model; *RC* = quasi-row-column effect model; *E-RC* = quasi-equal-row and column effect model.

linear models in terms of likelihood ratios and BIC scores respectively.

Model 1 assumes that when controlling for cohort and educational differences, there is no association between the origin and destination class. This model fits the data poorly. In Models–7, the pattern of association is studied in more detail. First, we want to find out whether there is an overrepresentation of men who remain in the same class when controlling for structural mobility. To test this tendency toward class similarity, Model 2 contains a parameter ( $D$ ) for the main diagonal representing the general inheritance parameter (Hout, 1983). That is to say, this model tests the tendency of men to be socially stable within one generation across social classes. Additionally, Model 3 assumes that the strength of the tendency toward class similarity differs among the origin and destination class. The parameters  $D_i$  in Model 3 show the stability of all social classes within the adjusted EGP class schema. Model 2 shows a strong improvement of fit compared to Model 1 and the fit improves substantially in the next step to Model 3. This substantial improvement of the fit of Models 1 and 2 makes clear that the tendency toward intragenerational class stability dominates the association strongly.

Next, the association in the off-diagonal cells of the mobility table is analysed. Model 4 in Table 4 is a quasi-symmetry model. This model assumes that the inflow to the destination class and the outflow from the origin class is symmetrical. The quasi-symmetry model (Model 4) fits a separate parameter for each off-diagonal cell of the table, with the only restriction that the pattern of relative association must be symmetrical. The fit of this model improves substantially compared to Model 1, which means that the mobility in this intragenerational mobility table is symmetrical.

The quasi-symmetry model implies that mobility is less likely as the distance between origin and destination increases. Using association models, it is possible to reveal whether there is a quasi-symmetric pattern within this intragenerational mobility table. Models–7 show these patterns. Model 5 is the quasi-uniform association model and it assumes that the barrier to climb up one class or to go down one class is the same within the intragenerational mobility table. Models 6 and 7 are the quasi-row-column-effects models assuming that the association differs between the classes of origin (first class of occupation) as well as between the classes of destination (the last/current class of occupation). Model 6 assumes the row and column effects to be the same while Model 7 assumes the row and column effects to be different. According

to BIC scores, Model 6 is the best model for these samples, which means that mobility within this intragenerational mobility table to be the same for origin and destination classes.

## Career Class Immobility Over Time

So far, the mobility patterns within the intragenerational class mobility table are revealed, we continue the analysis by examining the over time mobility patterns in this table. The over time mobility models are based on Model 6 since this model is the best model according to the BIC scores. Model 8 assumes that the parameters for the differences in class stability among social classes differ linearly across cohorts while Model 9 does so for each cohort. Model 10 assumes that the strength of the tendency toward class stability differs among social classes across cohorts linearly while Model 11 assumes that the class stability of social classes differs for each cohort. The improvement in the fit of these models is lower than Model 6, but these models fit the data significantly well according to the likelihood ratio  $L^2$ . We expect that the ‘new’ social classes stabilize over time by recruiting more from their own class of origin and therefore organize their own class interest. That is to say, we are interested in the linear trends of the strength of class stability (immobility). Model 10 calculates these parameters. Thus, our expectation is modelled in Model 10 and the parameters  $D_i^*C_0L$  show this tendency toward more (or less) closed ‘new’ social classes over cohorts. The parameters  $D_i$  and  $D_i^*C_0L$  of this model are shown in Table 5.

In Table 5, the logarithmic parameters  $D_i$  and  $D_i^*C_0L$  and the multiplicative versions of them are presented. The parameters  $D_i$  and  $D_i^*C_0L$  are from Model 10 shown in Table 4. Panel A of this table tests our first hypothesis and Panel B tests our second hypothesis. The parameters  $D_i$  are the average immobility scores. Since the multiplicative version of these parameters is easier to understand, we discuss them. The parameters for the differences in social class stability among the origin and destination class show that the high-grade social-cultural specialists have the most clear-cut class boundary. The low-grade social-cultural specialists are the third closed social class while the class of self-employed persons is the second closed social class. The class stability of the two ‘new’ social classes (the high- and low-grade social-cultural specialists) and the class of the self-employed persons are respectively 72.24, 8.33, and 13.59 times higher than average. On the other hand, the most open social class is the unskilled manual workers: it is 0.97

**Table 5** Odds ratios ( $\text{Exp}(D_i)$ ) of the main diagonal of first class of occupation (origin class) and class of occupation of 40 years of age (destination class) for men and trends in these odds ratios  $\text{Exp}(D_i^*C_0L)$ **Parameters of Model 10 from Table 4**

Social Classes	Panel A $\text{Exp}(D_i)$	Panel B $\text{Exp}(D_i^*C_0L)$
High-grade technocrats	1.51	1.01
High-grade social-cultural specialists	72.24*	0.73
Low-grade technocrats	2.77*	1.06
Low-grade social-cultural specialists	8.33*	1.13*
Routine non-manual employees	3.35*	1.02
Self-employed persons	13.59*	1.05
Skilled manual workers	4.66*	1.23*
Unskilled manual workers	0.97	0.79*

$D_i$  = differences among diagonal cells;  $C_0L$  = Cohort Linear. \* $p < 0.001$ .

times less closed than average. The high- and low-grade technocrats are highly unstable classes. The second and third most open social classes are the high- and low-grade technocrats: they are respectively 1.51 and 2.77 times more closed than average. The immobility of the high-grade technocrats does not differ significantly from the average immobile persons under this model. Comparison of these classes makes clear that our findings support the hypothesis stating that the 'new' social classes are more closed than the other traditional social classes of the EGP class schema. The class of the low-grade technocrats is also significantly more closed than the average. The class of the high-grade technocrats is more closed than the average but not significantly.

The logarithmic parameters  $D_i^*C_0L$  in Table 5 give strength to the tendency toward class stability among social classes across cohorts. Here too, we prefer to interpret the multiplicative versions of these logarithmic parameters. The low-grade social-cultural specialists close 1.13 times their boundaries per cohort than average. This supports the hypothesis that the 'new' social classes need time to consolidate their career class mobility. However, the high-grade social-cultural specialists do not show a significant development toward a more stable class with regard to career class mobility over cohorts. The sign of the logarithmic parameter of the high-grade social-cultural specialists is negative showing a decreasing stability of this class over cohorts but this trend is not significant. Given the very high level of closure of this class, it seems that the class formation process of this class has already ended in the Netherlands in the late 20th century. Therefore, it is unlikely that the stability of this class will increase further. The class boundary of

the skilled manual workers is closed 1.23 times more per cohort than average while the class of the unskilled manual workers open their class boundary 0.79 times more per cohort than average. None of the parameters of the high- and low-grade technocrats show a significant development of class closure across cohorts. Consequently, the data support partly our hypothesis stating that the 'new' social classes become more closed over time.

## Conclusions

In this study, we examined the intragenerational (im)mobility patterns of the middle class fractions as they were distinguished by Güveli *et al.* (2005, 2007). They subdivided the middle class into social-cultural specialists and technocrats with both a higher and a lower version. Our first hypothesis states that the classes of the high- and low-grade social-cultural specialists are more closed than the other social classes. A social class without a clear-cut boundary cannot organize its class interest, and therefore it is not justifiable to consider this class a social class. The second hypothesis states that if the new social classes are rising, the class boundaries will become more crystallized because new classes need time to organize their class interest.

The data analysis strongly supports the hypothesis that the 'new' social classes are more closed than other traditional social classes. It turned out that the high-grade social-cultural specialists have the most clear-cut class boundary. The class of proprietors and farmers (self-employed) have the second most clear-cut class boundary, immediately followed by the low-grade



social-cultural specialists. The outstanding class boundaries of the high- and low-grade social-cultural specialists may partly be attributed to the field of education the members of the 'new' social classes have.<sup>3</sup> It could be attributed to the field of education because one of the criteria of distinguishing the 'new' social classes is that 'new' class members' work tasks are based on specialized knowledge of social and cultural issues. However, note that due to the other criteria, not all people with specialized knowledge on social and cultural issues belong to the class of social-cultural specialists. Even though they have socially and culturally specialized knowledge, employees within the middle class who are relatively easy to control belong to the class of technocrats. On the other hand, educational credentials are also required in occupations within the traditional classes such as in the classes of the high- and low-grade technocrats. To become an architect and an engineer, one also needs to be trained in a fitting field of education. Nevertheless, we would like to mention that the occupations within the classes of the high- and low-grade social-cultural specialists require educational credentials relatively more often and more extensively than occupations in other classes. Requiring educational credentials is not only a feature of the field of education, but it is also a feature of the type of occupation.

There is also support for the second hypothesis. Even when controlling for the level of education, the data show that the immobility of the low-grade social-cultural specialists increases over time significantly. This supports the idea that the low-grade social-cultural specialists need time to consolidate their class stability. Furthermore, the data do not show a significant trend toward increasing immobility for the high-grade social-cultural specialists. Since this class is already the most closed class, it is unlikely that its immobility increased even further. That is to say, it is possible that this class had already consolidated its stability, and therefore cannot increase it further.

Furthermore, our data do not show that the immobility increases significantly over cohorts for the other classes, with the skilled manual workers as an exception. On the other hand, the immobility of the class of unskilled manual workers is decreasing and this seems to be in contrast with the counterbalance thesis. A question for further research is why the immobility of the class of skilled manual workers is increasing whereas the immobility of the class of unskilled manual workers is decreasing?

All in all, our results support the subdivision of the middle class. The middle class fractions differentiate

themselves by their clear-cut intragenerational mobility boundaries. Why is intragenerational immobility of the new classes important and what are the consequences of our results? Intragenerational class (im)mobility is important to reveal because of its implications on people's life chances and lifestyles. The impact of class (im)mobility during the life course is an underexposed subject. Sociologists have often investigated the influence of intergenerational (im)mobility on political orientation (Barber, 1970; Clifford and Heath, 1993; De Graaf and Ultee, 1990; De Graaf *et al.*, 1995). In our understanding, a way of investigating the net effect of people's own class on people's life chances and lifestyles is by comparing immobile with mobile persons. This may help to understand the relationship between one's class position and one's behaviour and attitudes. It is generally known that social class position has an effect on political preferences, educational outcomes, earnings, health and variety of other outcomes (Lipset, 1960 [1981]; Marshall *et al.* 1988; Nieuwbeerta, 1995; Kriesi, 1989; Goldthorpe, 2000; Heath and Clifford, 1990; Wright, 1985; Bourdieu, 1984). However, the theoretical reasoning of these effects is not explicated satisfactorily (Breen and Rottman, 1995), except for political preferences. Maybe in the future, we will gain more insight as to why social classes differ in outcomes by comparing intragenerationally immobile class members with those of mobile class members.

## Notes

1. Calculation of the percentage of immobile persons within Table 2 is, to sum up the immobile persons of all classes (Ia, Ib, IIa, IIb, III, IV, V/VI, VII) and divide this by the total amount of persons. We can take the percentage of immobile persons from the absolute totals of the columns to find the absolute number of immobile persons (persons in the main diagonal cells). For example, the absolute immobile high technocrats are 24.3 per cent of 918. Those are 223 persons. We do this for all main diagonal cells. That is:  $223 + 109 + 248 + 295 + 388 + 162 + 706 + 518 = 2649/5787 = 0.46$ . The percentage of mobile persons is then  $1.0 - 0.46 = 0.54$ .
2. We analysed the log linear models for women separately. None of the log linear models for women show a reasonable fit with the data. The reason for this may be that the intragenerational mobility table for women contain many zero-cells. Therefore, we exclude women from further



analysis. The log linear models are available on request for interested readers.

3. We are aware that one can reveal a part of the relation of why the new classes are more closed than other classes by including the field of education or the labour market segments in the model. However, only a small part of our data contains this information. Using only this part of the data results in many null-cells in our tables and our models become unstable. Therefore, we prefer to use the complete data set and not to include the field of education and the labour market segments in our analyses.

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### Appendix 1 Data Source for men and women in the labour force in the Netherlands 1982–2003

Nr AKRO	ABBREVIATED STUDY TITLE	Men (N)	Women (N)
net82n	National Labour Market Survey, 1982	1,335	1,342
net82u	National Prestige and Mobility Survey, 1982	497	256
net87i	Cultural Change [ISSP] 1987	934	1,056
net91j	Justice of Income Survey 1991 [ISJP]	950	833
net92f	Netherlands Family Survey I, 1992-93	902	898
net94h	Household in the Netherlands pilot, 1994	440	595
net95h	Household in the Netherlands pilot, 1995	1,019	1,014
net95y	Subsample Household in the Netherlands pilot, 1995	680	641
net96	Social Inequality in the Netherlands, 1996	412	378
net96c	National Crime Study, 1996	813	1065
net96y	Subsample National Crime Study, 1996	355	435
net98	Social and Economic Attitudes, 1998	542	391
net98f	Netherlands Family Survey II, 1998	1,000	1,029
net99	Use of Information Technology, 1999	1,431	1,080
net00	Netherlands Family Survey III, 2000	779	782
net04	Netherlands Family Survey IV, 2003	1,063	1,111
	Total	13,152	12,906

See for more information: <<http://www.scw.vu.nl/~ganzeboom/ismf>>.

## Appendix 2

The ISCO 1968 codes of the occupations of four classes within the service class

**Ia. High-grade technocrats** (0100 0110 0120 0130 0131 0132 0133 0139 0200 0210 0220 0230 0240 0250 0260 0270 0280 0290 0409 0400 0410 0411 0419 0420 0429 0430 0500 0510 0520 0521 0529 0530 0531 0539 0670 0800 0810 0820 0900 1100 1101 1109 1200 1211 1220 1221 1222 1229 1290 1394 2000 2010 2011 2012 2013 2014 2015 2019 2020 2021 2022 2023 2024 2029 2030 2031 2032 2033 2034 2035 2036 2039 2111 2114 2115 2119 2192 2193 2194 2195 2197 5822 5831).

**Ib. High-grade social-cultural specialists** (0600 0610 0611 0619 0630 0650 1210 1219 1299 1310 1311 1319 1392 1411 1740 1951 1960 1900 1920 1921 1922 1923 1924 1929).

**Ila. Low-grade technocrats** (0140 0300 0310 0320 0329 0330 0339 0340 0350 0360 0370 0380 0390 0421

0540 0541 0549 0620 0660 0680 0751 0770 0791 0793 0830 0840 0849 1291 1511 1622 1629 1630 1631 1790 1800 1992 1993 1994 1995 1999 2112 2113 2116 2120 2190 2191 2196 2199 3009 3100 3101 3102 3103 3104 3109 3500 3510 3520 4000 4001 4002 4009 4200 4210 4220 4221 4222 4229 4300 4310 4319 4400 4410 4411 4412 4419 4420 4430 4431 4432 4439 5000 5001 5002 5009 5100 5101 5102 5103 5104 5109 5823).

**IIf. Low-grade social-cultural specialists** (0640 0690 0700 0710 0711 0715 0719 0730 0740 0750 0759 0760 0761 0769 0780 0790 0792 0799 1300 1320 1321 1329 1330 1340 1350 1390 1391 1399 1400 1410 1412 1413 1414 1415 1416 1419 1490 1499 1500 1510 1519 1590 1591 1592 1593 1599 1600 1610 1620 1621 1639 1700 1710 1711 1712 1713 1719 1720 1721 1729 1730 1731 1732 1739 1749 1750 1791 1799 1801 1809 1910 1930 1931 1939 1940 1941 1949 1950 1959 1990 1991 5820 5821 5829).